

Wishing you & your family A Merry Christmas & Happy New Year 2025

## **ILLUMINATION**

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## **Overview of Textile Chemicals**



Textile chemicals are essential in various stages of Textile manufacturing, including dyeing, finishing, and fabric production. Below is a breakdown of Key Chemicals used in the Textile Industry and their specific functions:

#### 1. Acetic Acid (Ethanoic Acid)

Dyeing: Used to fix Dyes to Fabrics, enhancing colorfastness and preventing fading and bleeding. It also helps to adjust the pH of dye baths to create an optimal environment for dyeing different fibers.

Fabric Treatment: Treats Natural and Synthetic Fabrics to improve resistance to Bacteria, Stains, and Odors.

Fabric Production: Key in the production of Fabrics such as Viscose and Latex, and also acts as a pre-treatment Chemical in Textile Printing.

Cleaning and Degreasing: Removes excess Dyes, Impurities, and Residues from Fabrics, improving their appearance and quality.

#### 2. Urea

Dye Solubilization: Increases the solubility of dyes in water, leading to brighter and more intense colors.

Humectant: Helps to maintain moisture in the Fabric, extending the reaction time between Fibers and Dyes.

Swelling Agent: Swells Cellulose Fibers during steaming, improving Dye penetration.

#### 3. Citric Acid Monohydrate

Chemical Fixing Agent: Improves Textile properties such as Wrinkle Resistance, Anti-odor effects, low Shrinkage, and Antimicrobial properties.

Color Fixer: Used to fix colors in Textiles, ensuring they remain vibrant.

pH Regulator: Regulates the pH levels during dyeing processes.

Antimicrobial Finishing: Reduces odor, deterioration, and staining caused by Microbiological activity.

Nylon Production: Involved in the manufacturing of Nylon, a key synthetic fiber.

#### 4. Phosphoric Acid

Color Removal: Used in combination with Potassium Permanganate to remove color from Denim Fabric.

Flame Retardant: An important component in some flame retardant formulations used in Textiles.

pH Adjustment: Commonly used to adjust the pH of Textile processing solutions.

Decolorization: Helps to decolorize fabrics when combined with Phosphorous Acid Derivatives.

### 5. Caustic Soda (Sodium Hydroxide)

Mercerizing: Treats Fabrics to improve their strength, Luster, and Dye affinity by swelling the Fibers.

Pre-treatment: Removes impurities like Waxes, Fats, and Pectins from raw fibers.

Desizing: Removes size from Yarns applied during Weaving.

Dyeing: Maintains the pH balance in dyeing solutions.

Finishing: Creates Crease-Resistant finishes on Cotton Fabrics.

Processing Raw Silk: Removes Sericin, the protective gum around Silk Fibers, to enhance Softness and Sheen.

#### 6. Hydrogen Peroxide

Brightening: Makes Fabrics bright and visually appealing.

Preserving: Helps preserve the mechanical properties of Fibers. Gray Color Removal: Removes the natural gray tint from Fabrics.

Stain Removal: Oxidizes stains, making them easier to wash away, and is also used in Laundry Detergents.





## - Dec 2024 -**PCAPL Events**

## PCAPL Participated in "Global Chem Show 2024" at BEC Mumbai - Stall C3











## Secret Santa Christmas Celebration at Prakash House















Mr. Shashivendra Singh







# - Dec 2024 - CSR Activities

On World AIDS Day, providing nutritious support to HIV-positive patients at SSG Hospital, Vadodara, in collaboration with Dabur India





Celebrating Sports Day with Joy and Play at Our Adopted Anganwadi





On World Disability Day, we celebrated and empowered specially abled children through creativity and support for an inclusive society.





**Empowering women through our CSR initiatives** 







Providing healthcare and hope through our CSR medical camp initiatives







- GHCL Ltd., amongst the largest Soda Ash and industrial salt-makers in India, has announced receipt of environmental clearance for its Soda Ash Greenfield Project in Kutch, Gujarat
- To promote the balanced use of fertilisers, the fertiliser industry has demanded that the prices of fertilisers should be fixed based on its nutritional value.
- INOXGFL Group, a diversified business operating in speciality chemicals, fluoropolymers, gases, wind turbines and renewables, has ventured into solar manufacturing through lnox Solar, a privately held entity owned by the promoters.
- The Directorate General of Trade Remedies (DGTR), under the Ministry of Commerce and Industry, has officially terminated the anti – dumping investigation concerning imports of mono-ethylene glycol (MEG) originating from Kuwait, Saudi Arabia, and USA.
- The Central Government will soon launch a Technology Collaboration Portal (TCL) to act as a bridge between research institutions and the chemical manufacturing industry.
- The utility of plastics, including as a means of packaging, is unquestionable, and the material stands out in comprehensive analyses as a sustainable material compared to several other options. Despite this, the issue of plastics waste is a matter of great concern, including in India where streets and water bodies are littered with indiscriminately disposed wastes.
- Revalyu Resources, a leading chemical PET recycling company with a global presence, has commissioned its second technology-leading polyethylene terephthalate (PET) recycling plant at its site in Nashik, to further bolster its production capacity and meet growing customer demands.
- The Fragrances & Flavours Association of India (FAFAI) is organising its 26th annual FAFAI International Convention and Expo from March 5 to 7, 2025, at the Yashobhoomi Convention Centre in Dwarka, New Delhi.
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- Pidilite Industries is focusing on scaling up its tile adhesive brand, Roff, as Indian consumers are increasingly seeking specialised home solution products, according to a report in the Hindu Business Line.
- BASF has opened its new Catalyst Development and Solids Processing Centre in Ludwigshafen, Germany. This research facility will serve as a hub for pilot-scale synthesis of chemical catalysts.
- Fertiliser major IFFCO, which has introduced Nano Liquid Urea and Nano Liquid DAP, has now developed Nano NPK Nutrient and sought the Government's approval to launch it in the market.
- There are several Commodity Chemicals (aside of polymers) that India currently imports in excess of 1-Mt annually. At the top of the list is methanol, for which imports in FY 24 was about 5.6-Mts.
- Carbon black manufacturer, Epsilon Carbon, has announced that its Karnataka manufacturing plant has received International Sustainability and Carbon Certification (ISCC) Plus certification.
- The Indian arm of German speciality chemicals firm, Evonik, has announced the inauguration of its new Care Solutions Applied Innovation Labin Thane, near Mumbai.
- Deepak Chem Tech Ltd. (DCTL), a wholly-owned subsidiary of Deepak Nitrite Ltd., has announced its board's approval to undertake the project for manufacturing polycarbonate (PC) resins involving an investment of around Rs. 5,000-crores including green field infrastructure capex, subject to completion of detailed engineering.
- Lubrizol, a global leader in Specialty Chemicals, and Polyhose, global leader in Fluid Conveyance System, have signed a Memorandum of Understanding (MoU) to create a Medical Manufacturing Site in Tamil Nadu.
- National Fertilizers Ltd a government-owned enterprise, has announced that it will begin manufacturing Nano Urea at its Nangal Plant in Punjab. The facility will produce 1.5 lakh bottles of 500-ml Nano Urea daily using advanced Nanotechnology.

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## The Shy Boy Who Became a Superhero



In the bustling town of Bright-vale lived a shy boy named Raj. Raj hardly spoke to anyone and spent most of his time in the library, buried in books about science and inventions. While others thought he was odd, Raj dreamed of creating something that could make the world a better place.

One day, an accident occurred at the town's park. A group of children had climbed onto a broken Ferris wheel, and the wheel suddenly began to shake dangerously. The townsfolk gathered, panicked and unsure of what to do. The situation looked grim, and time was running out.

Raj, who was walking home from the library, saw the commotion. At first, his shyness made him hesitate. But then he remembered all the principles of Physics and Mechanics he had studied. Gathering his courage, he pushed through the crowd and inspected the Ferris wheel.

"I think I can fix this," he said softly.

Though skeptical, the towns people stepped back and let Raj work. Using a wrench from his bag and a few tools borrowed from nearby vendors, Raj repaired the gear mechanism and stabilized the wheel. Finally, he activated the emergency lever, lowering the children safely to the ground.

The crowd erupted in cheers. Raj, blushing and overwhelmed, tried to disappear back into the crowd, but the mayor stopped him. "Raj, today you've shown us all what a true superhero looks like," the Mayor said. "It's not about flashy costumes or powers—it's about using your gifts to help others."

From that day onwards Raj wasn't just the shy boy who stayed in the library. He became Bright-vale's very own "Hero of the Mind," inspiring others to embrace their talents and step up when the world needed them.

Moral: Your unique skills and knowledge can make a big difference. True heroism is about using your strengths to help others, no matter how quiet or unnoticed you may feel.



## How to build Effective Leadership Skills



Effective leadership is the cornerstone of any successful Team or Organization. It involves more than just managing tasks; it requires the ability to inspire, guide, and empower others towards a common goal. Developing leadership skills is a journey of self-discovery, continuous learning, and practical application. Whether you are a seasoned leader or aspiring to step into a leadership role, cultivating these skills is essential for navigating challenges, fostering innovation, and building strong relationships. This guide outlines the key strategies and practices to help you to become a confident and impactful leader. Some of the Key Strategies to develop and enhance leadership abilities are:

- Cultivate self-awareness, understand strengths and weaknesses and develop skills, empathy and social awareness to manage relationships effectively.
- Focus on active listening/understanding before responding and ensure team understands goals, challenges and expectations.
- Clebrate team achievements and provide constructive feedback.
- Develop strategic hinking and create contingency plans for potential obstacles.
- Enhance decision making skills and strengthen conflict resolution abilities
- Encourage teamwork and shared responsibility and express gratitude and recognize efforts.
- Maintain composure and inspire confidence during challenges and also develop a mindset that looks for opportunity in adversity.

Building effective leadership skills is an ongoing journey that requires self-awareness, adaptability, and a commitment to growth. Great leaders are not born; they are developed through intentional effort, learning from experiences, and building strong relationships. By cultivating emotional intelligence, communicating effectively, and fostering a positive and inclusive culture, you can inspire and empower others to achieve shared goals.

Leadership is about service, trust, and influence and not authority. Continuously seek feedback, embrace challenges, and strive to lead by example. As you grow, your leadership will not only elevate your team but also create lasting impacts in your organization and beyond.







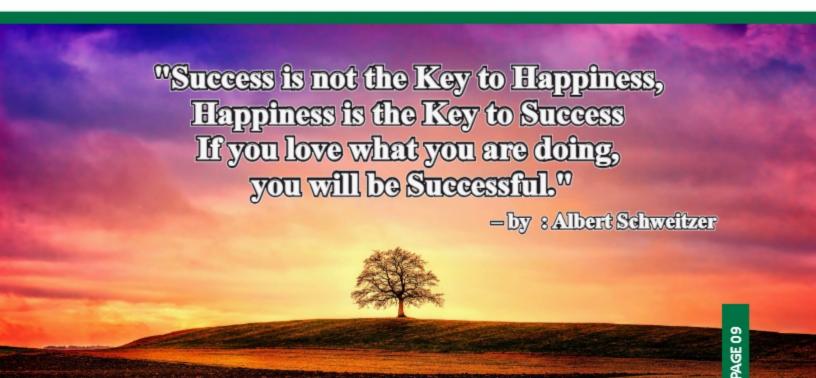
- Q1. 1111 = 7
  - 2222 = 9
  - 3333 = 19
  - 4444 = 18
  - 6666 = ?
- Q2. One Horse saw 4 cows while going towards a ground. Every cow saw 2 Donkeys are going towards the ground carrying one big barrel of water. How many animals are going towards the ground?
- Q3. There are 4 Professors in an Engg. College and they are telling that the Resercher Mr. Robinson is their brother. Robinson says he has no brothers. Who is lying?
- Q4. 74 47 = 762 76-67 = 1738 86-68 = 2276
  - 96-69 = ????

Q5. I can make you gaze, always will help you to colligate and the world feels meagre without me. What am I?

# Winner of Puzzle Competition - November 2024 !!! Congratulation - Mr. Mayur Sant !!!

Answer to the Puzzles of November 2024

- Q-1 ONE
- Q-2 REPINE
  - NETTLE
  - LENGTH
  - THIRST
  - STIGMA
  - MANUAL
- Q-3 WHATSAPP
- Q.4 BANANA
- Q-5 35 x 28 + 120 ÷ 10 7



## **Our Network**



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